

CLAIMS:

1. A thermal printer apparatus having a plurality of print stations for recording image information on a web of receiver moving along a path past a plurality of print stations having predetermined average raster line pitches, the
5 apparatus comprising:

an adjustable-speed receiver drive mechanism adapted to advance the receiver along the path;

a sensor adapted to detect the temperature of the receiver along the path;
and

10 a controller adapted to adjust the speed of the drive mechanism as a function of the detected temperature of the receiver so as to effect a shim of the average raster line pitch of the printer to compensate for changes in the temperature of the receiver.

2. A thermal printer apparatus as set forth in Claim 1, wherein the
15 sensor is a thermistor.

3. A thermal printer apparatus as set forth in Claim 1, wherein the sensor is adapted to sense the temperature of the receiver at a position along the path beyond all of said plurality of print stations.

4. A thermal printer apparatus as set forth in Claim 1, wherein:
20 the drive mechanism includes a roller; and
the sensor is adapted to sense the temperature of the receiver at a position along the path beyond all of said plurality of print stations and before the roller.

5. A thermal printer apparatus as set forth in Claim 1, wherein the drive mechanism:

25 includes a stepper motor; and

increases the stepping rate of the stepper motor based as a function of the detected temperature of the receiver so as to provide an adjustment of the speed of the stepper motor for the purpose of effecting a shim of the average raster line pitch of the printer.

6. A thermal printer apparatus for recording image information on receiver moving past a plurality of print stations having predetermined average raster line pitches, the apparatus comprising:

5 a ribbon cassette assembly for storing a thermal ribbon having dye, the ribbon cassette assembly including a supply ribbon core, a take-up ribbon core, a supply ribbon support adapted to support the supply ribbon core, and a take-up ribbon support adapted to support the take-up ribbon core;

10 an elongated thermal print head positionable in engagement with the thermal ribbon for transferring dye from the thermal ribbon to the moving receiver, the print head having a plurality of recording elements arranged in a main scan recording direction that is perpendicular to an advancement direction of the moving receiver, the main scan recording direction also being the direction of elongation of the print head;

15 an adjustable-speed receiver drive mechanism adapted to advance the receiver along the path in said advancement direction;

a sensor adapted to detect the temperature of the receiver along the path; and

20 a controller adapted to adjust the speed of the drive mechanism as a function of the detected temperature of the receiver so as to effect a shim of the average raster line pitch of the printer to compensate for changes in the temperature of the receiver.

7. A thermal printer apparatus as set forth in Claim 6, wherein the sensor is adapted to sense the temperature of the receiver at a position along the path beyond all of said plurality of print stations.

25 8. The printer apparatus of Claim 6 wherein:

the printer apparatus is a multi-color printer apparatus; and

there are a plurality of said ribbon cassette assemblies and a respective plurality of said print heads each associated with a said ribbon cassette assembly and each of said print heads.

9. A method for recording image information on a receiver moving along a path past a plurality of print stations having predetermined average raster line pitches, said method including the steps of:

5 moving the receiver along the path past a plurality of print stations;
detecting the temperature of the receiver along the path; and
adjusting the speed of the receiver as a function of the detected temperature of the receiver so as to effect a shim of the average raster line pitch of the printer to compensate for changes in the temperature of the receiver.

10 10. A method as set forth in Claim 9, wherein a thermistor is used to detect the temperature of the receiver.

11. A method as set forth in Claim 9, wherein the temperature of the receiver is detected at a position along the path beyond all of said plurality of print stations.

12. A method as set forth in Claim 9, wherein:
15 the moving step includes using a stepper motor; and
the adjusting step includes increasing the stepping rate of the stepper motor based as a function of the detected temperature of the receiver so as to provide an adjustment of the speed of the stepper motor for the purpose of effecting a shim of the average raster line pitch of the printer.

20 13. A method as set forth in Claim 9, wherein an empirical model of receiver speed as a function of detected receiver temperature is used in software to predict receiver speed during printing.

14. A method for recording image information on a receiver moving along a path past a plurality of print stations having predetermined
25 average raster line pitches, said method including the steps of:
moving the receiver along the path past a plurality of print stations;
producing an electrical signal having a value that is a function of the temperature of the receiver along the path; and

using the electrical signal to adjust the speed of the receiver so as to effect a shim of the average raster line pitch of the printer to compensate for changes in the temperature of the receiver.

5 **15.** A thermal printer apparatus having a plurality of print stations for recording image information on a web of receiver moving along a path past a plurality of print stations having predetermined average raster line pitches, the apparatus comprising:

 an adjustable-speed receiver drive mechanism adapted to advance the receiver along the path;

10 multiple sensors adapted to detect the temperature of the receiver and surfaces along the path; and

 a controller adapted to adjust the speed of the drive mechanism as a function of the detected temperatures so as to effect a shim of the average raster line pitch of the printer to compensate for changes in the temperatures.

15 **16.** A thermal printer apparatus as set forth in Claim 15, wherein the sensors are thermistors.

17. A thermal printer apparatus as set forth in Claim 15, wherein the sensors are adapted to sense the temperatures at positions along the path beyond all of said plurality of print stations.

20 **18.** A thermal printer apparatus as set forth in Claim 1, wherein: the drive mechanism includes a capstan drive roller;

 one of the sensors is adapted to sense the temperature of the receiver at a position along the path beyond all of said plurality of print stations and before the capstan drive roller; and

25 another of the sensors is adapted to sense the temperature of a surface the capstan drive roller.

19. A thermal printer apparatus as set forth in Claim 15, wherein the drive mechanism:

 includes a stepper motor; and

increases the stepping rate of the stepper motor based as a function of the detected temperatures so as to provide an adjustment of the speed of the stepper motor for the purpose of effecting a shim of the average raster line pitch of the printer.

5 **20.** A thermal printer apparatus for recording image information on receiver moving past a plurality of print stations having predetermined average raster line pitches, the apparatus comprising:

 a ribbon cassette assembly for storing a thermal ribbon having dye, the ribbon cassette assembly including a supply ribbon core, a take-up ribbon core, a
10 supply ribbon support adapted to support the supply ribbon core, and a take-up ribbon support adapted to support the take-up ribbon core;

 an elongated thermal print head positionable in engagement with the thermal ribbon for transferring dye from the thermal ribbon to the moving receiver, the print head having a plurality of recording elements arranged in a main
15 scan recording direction that is perpendicular to an advancement direction of the moving receiver, the main scan recording direction also being the direction of elongation of the print head;

 an adjustable-speed receiver drive mechanism adapted to advance the receiver along the path in said advancement direction;

20 a plurality of sensors adapted to detect the temperature of the receiver and surfaces along the path; and

 a controller adapted to adjust the speed of the drive mechanism as a function of the detected temperatures so as to effect a shim of the average raster line pitch of the printer to compensate for changes in the temperature of the
25 receiver.

21. A thermal printer apparatus as set forth in Claim 20, wherein the sensors are adapted to sense the temperatures at positions along the path beyond all of said plurality of print stations.

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